The Voice of the Off-Grid Solar Energy Industry

Madagascar

Introduction

This note was developed by GOGLA with the support of the World Bank Group Lighting Global Program, the Energy Sector Management Assistance Program (ESMAP), the Shell Foundation, USAID, Power Africa, the UK Foreign Commonwealth & Development Office (FCDO) and Sustainable Energy for All (SEforAll). It is part of a series of briefing notes that provide a high-level overview of the status of countries' off-grid solar markets, as well as relevant policies and programs.

Key statistics[1&2]

Demographics	
Total Population	27,691,019
Population Density per km^2	48
GDP per Capita	USD 495.5
GDP Growth	-4.2%
Energy Access Deficit	
National Electrification Rate [3]	26.9%
Urban Electrification Rate	79.5%
Rural Electrification Rate	5%
Number of households without power	4.33 million
% of quality-verified[4] (QV) vs non-QV products in the market[5&6] (H1, 2021)	QV: 57.4% Non-QV: 74.2%
Electrification Planning	
Electrification Targets[7]	National Electrification rate of 70% by 2030.

Impact[8]

243,000
people currently accessing Tier 1 energy services

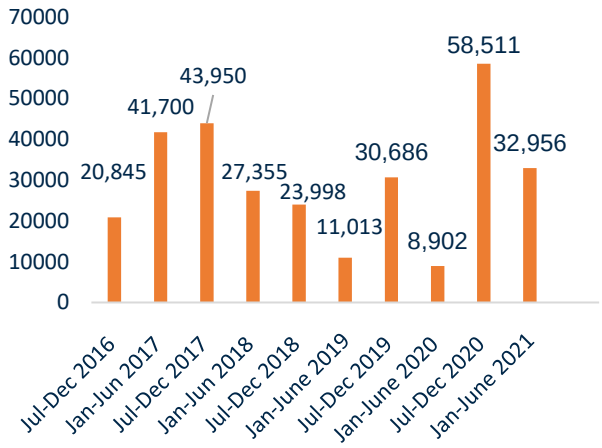
4,000
people currently accessing Tier 2 energy services

305,500,000
additional light hours unlocked for study, productive tasks, or leisure time

162
change in quality of light in lumens per household

725,000
people currently living with improved energy access

Sales[9]



Sales of Portable Lanterns, Multi-light Systems and Solar Home Systems

[1] https://data.worldbank.org/
[2] https://www.usaid.gov/powerafrica
[3] No recent data on the national electrification rate has been published by the government of Madagascar
[4] Quality-verified products are tested according to the Lighting Global Quality Standards. For more information, please see the Lighting Global Quality Assurance Program.
[5] Share of quality-verified (QV) and non-QV sold by GOGLA and Lighting Global affiliates.
[6] Data on a specific region, country or product category is only included when it has satisfied the three-data point rule, meaning that at least three separate product manufacturers have reported data for any single data point. When we have fewer than three responses for a region, country or product category, no results are shown to protect the proprietary interests of the companies who have supplied data in support of this industry report.
[7] Visit the World Bank for more information.
[8] Impact numbers have been estimated by plugging the most recent sales data into the Standardized Impact Metrics for the Off-Grid Solar Energy Sector. The reported estimates differ from the previous edition of the country briefings due to the use of a smaller, yet more consistent and recent dataset, considering only products sold by GOGLA members and Lighting Global affiliates since 2016. Note that while the numbers shown represent the aggregate impact of key players in the off-grid solar sector, these estimates do not present the full global impact of off-grid solar lighting products sold.
[9] All sales data included in this briefing is derived from the "Global Off-Grid Solar Market Report Database", result of a joint primary data collection effort carried out by GOGLA in partnership with IFC Lighting Global and the Efficiency for Access Coalition. The public version of the resulting report of the effort is available here.

Current Status

It is estimated that approximately three quarters of the Malagasy population lack access to electricity. Rural areas of the country are unequally electrified with an approximate electrification rate of just 5%.

The Malagasy government sees off-grid solutions as an opportunity to be seized to improve access to electricity. Preliminary analysis suggests that off-grid solar solutions would be the most cost effective for nearly 60% of Malagasy households by 2030.[10] World Bank projections, based on preliminary geospatial analysis, suggest about 75% of new connections under the national electrification plan should be provided through the deployment of off-grid solar technologies, consisting mainly of mini-grids and Stand Alone Solar devices

Owing to the large population size and limited access to the grid, Madagascar has a large addressable market for solar solutions with a potential customer base of 2.5 to 5 million households for solar lamps and market-entry solar home systems. Consequently, there are a small number of social enterprises distributing solar home systems including Heri, Jiro-Ve, and Nanoe who offer solutions on a rental or pay-as-you-go (PAYGo) basis. Baobab+ also operates in the country, offering PAYGo solutions, microcredit, and loans for the purchase of solar products.

Sales of off-grid solar products in Madagascar totalled approximately 59,000 units between July and December 2020. This is a 557% increase compared to the first half of 2020.[11] The rapid increase in sales can be partly attributed to the start of the US$40 million Off-Grid Market Development Fund Program, a Results-Based Financing scheme that was developed by the Government of Madagascar, the World Bank and Bamboo Capital Partners.[12]

Policy, Regulation and Sector Planning

The Ministère de l'Eau, de l'Énergie et des Hydrocarbures (MEH) (Ministry of Water, Energy and Hydrocarbons) sets government policy and provides strategic coordination of the energy sector and oversight of JIRAMA, the national water and electricity company.

In 2015, the government of Madagascar launched the Nouvelle Politique de l'Énergie 2015-2030[13] (NPE 2015-2030). The energy policy addresses several pressing economic, social, and environmental challenges. It supports the transition to the energy mix for electricity and supports the transition to the energy mix for electricity and lighting, which will include 80% of renewable resources. As part of this national policy, the Stratégie Nationale d'Electrification (SNE) aims to connect 70% of households to the grid by 2030. Recognizing that large parts of the country may remain beyond the reach of the national grid, the government of Madagascar is embracing the potential offered by off-grid solar technologies. Thus, the strategy targets, among other things, the deployment of mini-grids and the extension of off-grid solar energy.

Among the key measures of the adopted NPE adopted is energy efficiency to realize benefits of efficient lighting in terms of energy savings and reduction of carbon dioxide emissions. The electricity code that was adopted in 2018, calls for the implementation of energy efficiency measures.

The Malagasy government is pursuing its ambition to put in place a legislative environment favorable to the expansion of the off-grid solar market through the 2015 Law on Public-Private Partnerships[14] (PPP) which establishes an applicable regulatory framework to mini-grids.

Promoting Quality & E-Waste Management

The government of Madagascar is moving towards the adoption of national quality standards to be harmonized with IEC/Lighting Global quality standards, covering both solar lights and solar home systems[15]. Voluntary standards were introduced in 2018, with the potential to become mandatory later. Meeting standards will be a requirement for companies seeking support through the forthcoming Least Cost Electricity Access Development (LEAD) project by the World Bank.

On June 9, 2015, decree number 2015-930 was voted on the Classification et gestion écologiquement rationnelle des Déchets d'Équipements Électroniques et Électriques (DEEE)[16] in Madagascar. This decree classifies the waste of electronic and electrical equipment on the national territory in order to manage it in an environmentally sound manner. The decree applies to domestic electronic and electrical equipment, professional and leisure electronic and electrical

[10] https://www.seforall.org/system/files/2019-11/EF-2019-TP-Madagascar-fr-SEforALL.pdf
[11] Global Off-Grid Solar Market Report H2 2020
[12] Visit the Off-Grid Market Development Fund for more information.
[13] http://www.ore.mg/Publication/Rapports/LettreDePolitique.pdf
[14] http://www.ore.mg/TextesDoc/Loi-2015-039PPP.pdf
[15] https://www.lightingafrica.org/country/madagascar/
[16] https://www.ecolex.org/fr/details/legislation/decret-n-2015-930-du-09-juin-2015-portant-classification-et-gestion-ecologiquement-rationnelle-des-dechets-dequipements-electroniques-et-electriques-deee-a-madagascar-lex-faoc162829/

equipment, environmentally sound management of Waste Electronic and Electrical Equipment (WEEE) at the national level.

Taxation

Solar products have import duty from 5% to 20% and 20% Valued Added Tax (VAT) of the cost of goods.

Investments

In 2020, the French bank, La Société Générale launched an energy access fund in Madagascar[17]. This fund will be dedicated to access to renewable energies with a budget of US$40 million initiated by the Malagasy government with financing from the World Bank. Bamboo Capital Partners, a platform specializing in impact enhancement, has been appointed manager of the Off-Grid Market Development Fund (OMDF). The Madagascan branch of La Société Générale will host the OMDF funds and provide funding. This fund aims to increase access to electricity through off-grid solar energy solutions, ranging from solar lights to entry-level solar home systems (SHSs). At the same time, the OMDF offers credit solutions to distributors and financial institutions active in the off-grid solar sector. According to the World Bank, this fund will equip 300,000 households by June 2024. Baobab + Madagascar has already received financial support from the OMDF. Thanks to this funding, the company sold 110,000 solar kits, reaching 120,000 households.

On June 8, 2021, The Fonds Français pour l'Environnement Mondial (FFEM) has signed signed a new funding agreement[18] with the Franco-Malagasy company specializing in nano-grids in order to facilitate access to electricity in the north of the country. The project will develop decentralized and digital electricity infrastructure based on renewable energies in the north of Madagascar. The installation of nano-grids supplied with energy by solar panels will allow nearly 40,000 users to have access to electricity.

Sector Support Programs

Most donors and NGOs in Madagascar are involved in larger rural electrification projects or mini-grids. Below are few programs identified with focus to accelerate the market for solar home systems:

KfW Development Bank has launched a credit line and technical assistance for solar loan product at Access Bank. The European Union (EU) financially supports the solar home systems suppliers HERi and Jiro-Ve through grants.

In 2019, the forthcoming US$150 million World Bank LEAD[19] (Least Cost Electricity Access Development) project includes US$60 million to promote distribution of quality solar home systems. The project targets electrification of 1.7 million people including 10,000 enterprises and 750 health centres. It also incorporates technical assistance component to the government with the development of national quality standards, and concessional financing. Access to finance will be provided through a local currency working capital facility and a 'Quality and Service' Results-Based Financing (RBF) facility, which includes three kinds of RBFs: a) based on sales achieved; b) for pay-as-you-go products, designed to bring down the risk of customer default; c) seed funding designed to incentivize smaller companies to meet key milestones such as entering a new area or completing training of sales staff. The closing date of the project is in 2024.

Opportunities and Barriers

Off-grid solar power has great potential on this island to supply electricity, primarily because of the low density of the population that makes the extension of the grid expensive.

To achieve government objectives, Madagascar requires sector financing which could curb the need for government subsidies [20]

There are already several local private companies that offer off-grid solar products on a cash or lease basis. These businesses are nascent but have managed to reach more than 50,000 households and this number could continue to grow if there is support from the government and other actors.

Although there is an increasing demand for off-grid solar products, companies have mentioned several barriers for growth, such as limited access to relevant finance to address to addressing potential end user affordability and working capital for off grid companies, and high cost of rural distribution due to poor infrastructure. In addition, complex customs procedures and unclear application of sales tax rules are causing delays with the clearance of goods, and low levels of quality assurance is undermining consumer confidence, as there are many low-quality solar products on the market. The demand for high-quality products is therefore diminished due to the negative perceptions of poor-quality products to malfunction.

[17] https://societegenerale.africa/fr/societe-generale-afrique/actualites/news-details/news/accroitre-acces-electricite-via-des-solutions-energie-solaire/
[18] https://www.ffem.fr/fr/actualites/nouveau-projet-delectrification-laterale-madagascar
[19] https://projects.worldbank.org/en/projects-operations/project-detail/P163870
[20] https://www.seforall.org/system/files/2019-11/EF-2019-TP-Madagascar-fr-SEforALL.pdf

Simultaneously, unfair price competition from suppliers of cheaper and counterfeit products distorts the market.

Further Information

- Lettre de Politique de l'Energie de Madagascar 2015-2030, Ministere de l'Energie et des Hydrocarbures
- Madagascar Fact Sheet, USAID Power Africa, 2017
- Lighting Africa Country Page - Madagascar
- Regulatory Indicators for Sustainable Energy (RISE) - Madagascar
- Global Off-Grid Solar Market Report H2 2020, GOGLA
- De l'électricité verte pour un millions de ruraux à Madagascar
- Madagascar, l'Ile aux réserves d'Énergie